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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CHRISTIE, PARKER & HALE, LLP  
350 WEST COLORADO BOULEVARD  
SUITE 500  
PASADENA, CA 91105

EXAMINER

LYONS, MICHAEL A

ART UNIT PAPER NUMBER

2877

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/051,391

Applicant(s)

PEZESHKI, BARDIA

Examiner

Michael A. Lyons

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s): 5
- 4) ☐ Interview Summary (PTO-413) Paper No(s): \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

## DETAILED ACTION

### *Drawings*

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: element 17, which is a detector, in Figure 2. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

The disclosure is objected to because of the following informalities: the description of the elements of Figure 1 is given with incorrect numbers. The only element with the correct number is the fiber 2.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adamovsky (5,715,047) in view of Holm-Kennedy et al (5,784,507).**

Regarding claim 1, Adamovsky (Fig. 3) discloses a device containing a movable path changing optical element 34 that deflects an incoming light beam to different positions of an air flow 33 depending on the position of the mirror. As for the "adapted to" statement in line 2, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires

the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

The airflow of Adamovsky, however, is not a position dependent optical element. Holm-Kennedy (Fig. 18A) discloses a spectrometer comprising an etalon having materials of different refractive indexes over its length that select various wavelengths dependant on the refractive index of the etalon at the point where the light strikes the etalon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the mirror of Adamovsky with the etalon of Holm-Kennedy to facilitate the changing and selection of spectral characteristics of an incoming light beam based on where it impinges the etalon.

As for claim 2, Adamovsky discloses mirror 34.

As for claim 3, the mirror "rotates around a certain axis in a prescribed manner to reflect the laser beam" (Col. 5, lines 26-27).

As for claim 4, the use of a MEMS mirror for a rotating mirror is well known in the art.

As for claim 5, various embodiments of Holm-Kennedy, such as Fig. 17A, are Fabry-Perot filters.

As for claim 6, Fig. 17A discloses a wedge shaped Fabry-Perot.

As for claim 7, Fig. 17A is a wedge shaped Fabry-Perot etalon.

As for claim 8, the filter contains steps of varying cavity length.

As for claim 9, Adamovsky discloses detector 39.

As for claim 10, Adamovsky discloses collimating lens 37.

As for claim 11, the use of a controller to control a moving or rotating mirror is well known.

As for claim 12, Fabry-Perot cavities are interferometers.

As for claims 13 and 16, the use of an optical fiber to provide and receive light is well known.

As for claims 14 and 17, the use of an optical circulator to provide light is well known.

As for claim 15, a device having different reflectivities for different polarizations is well known.

As for claim 18, the etalon of Fig. 17A of Holm-Kennedy can be comprised of "graded thickness waveguides" (Col. 32, line 33).

**Claims 19-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holm-Kennedy et al (5,784,507).**

Regarding claim 19, Holm-Kennedy (Fig. 18A) discloses a spectrometer comprising an etalon having materials of different refractive indexes over its length that select various wavelengths dependant on the refractive index of the etalon at the point where the light strikes the etalon. As for the "adapted to" statement in line 3, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

Means for providing light to the spectrometer, such as an optical fiber, however, is not disclosed. The use of an optical fiber for providing light to a system is well known, though, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize an optical fiber in the device of Holm-Kennedy to provide light to the device.

As for claim 20, the use of a unit that changes the phase of light based on the wavelength is well known.

As for claim 21, the filter contains steps of varying cavity length.

As for claim 22, the changing of the dispersion of light is well known.

As for claim 23, the changes of refractive indexes in the etalon filters the light based on wavelength.

As for claim 24, Fig. 17A is a Fabry-Perot filter of varying cavity length.

As for claim 25, a spatially varying reflector is well known.

As for claim 26, a reflector having various reflectivities for varying polarizations is well known.

As for claims 27 and 28, the etalon of Fig. 17A of Holm-Kennedy can be comprised of "graded thickness waveguides" (Col. 32, line 33).

**Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adamovsky (5,715,047) in view of Holm-Kennedy et al (5,784,507).**

Regarding claim 29, Adamovsky (Fig. 3) discloses means for reflecting light that is a movable path changing optical element 34 that deflects an incoming light beam to different positions of an air flow 33 depending on the position of the mirror.

The airflow of Adamovsky, however, is not a means for receiving light that changes a spectral characteristic of the light. Holm-Kennedy (Fig. 18A) discloses a spectrometer comprising an etalon having materials of different refractive indexes over its length that select various wavelengths dependant on the refractive index of the etalon at the point where the light strikes the etalon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the mirror of Adamovsky with the etalon of Holm-Kennedy to facilitate the changing and selection of spectral characteristics of an incoming light beam based on where it impinges the etalon.

Regarding claim 30, the rejections of claims 1 and 29 above disclose that the combined device of Adamovsky and Holm-Kennedy teach the claimed elements of the invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the claimed method of using the claimed invention to the combined device of Adamovsky and Holm-Kennedy to facilitate the generation of the desired results of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 703-305-1933. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on 703-308-4877. The fax phone numbers for the organization where this

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application or proceeding is assigned are 703-308-0725 for regular communications and 703-308-0725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0935.

MAL

May 22, 2003

*Frank G. Font*  
Frank G. Font  
Supervisory Patent Examiner  
Art Unit 2877